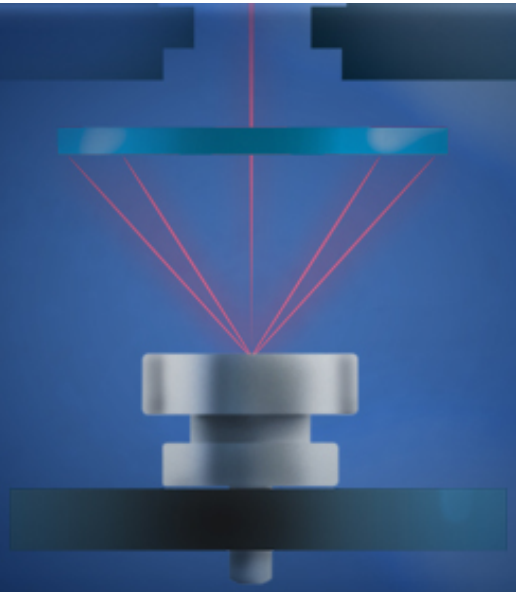
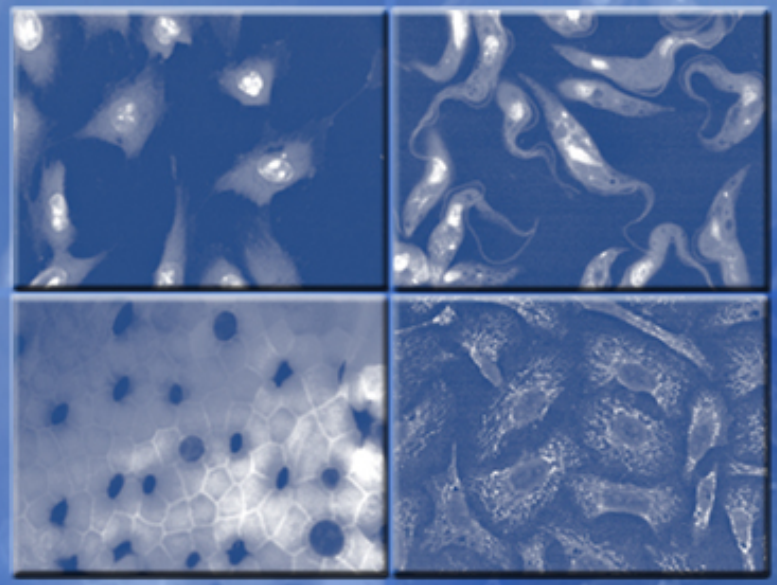


QUANTOMIX™

QX-302 CAPSULE USER GUIDE

UQX013 Issue 1.0

August 2005



General precautions

Use powder-free gloves only

During preparation and storage, never place capsules on any surface other than the Capsule Plate

Never touch the capsule membrane

Should sterility be required, handle in a sterile environment

Refer to Qx-302 user manual for further information
Sample preparation protocols can be found at *www.quantomix.com*

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The QX-302 Starter Kit

Step 1: Check Starter Kit contents

QX-302 Capsules:
1 box containing 12 capsules

x2

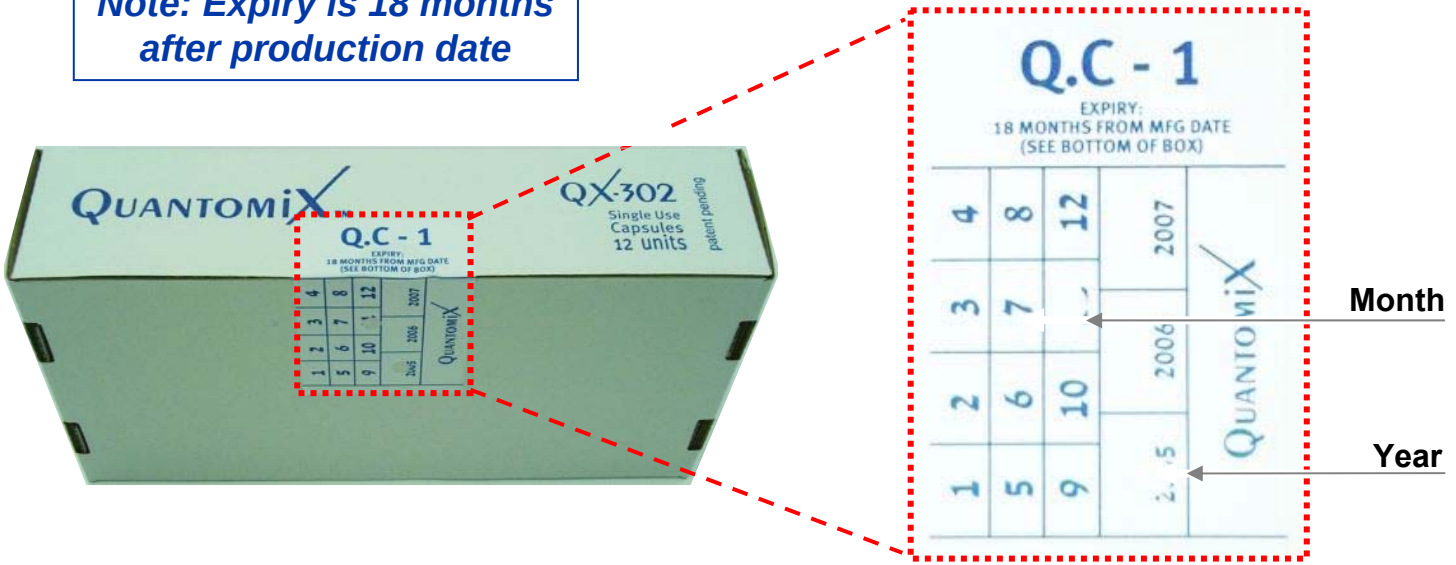
MP-12 Capsule Plates:
2 boxes containing one plate and cover each

One box containing:
IB-74 Imaging Buffer
RT-58 Calibration Capsule

QX-302 User Manual

Step 2: Check expiry & record lot

Note: Expiry is 18 months after production date



Record QX-302 lot number

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Step 3: Open Capsule Plate box

Use caution when using sharp objects

a

b

c

d

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Step 4: Open the QX-302 box

Use caution when using sharp objects

a

b

c

d

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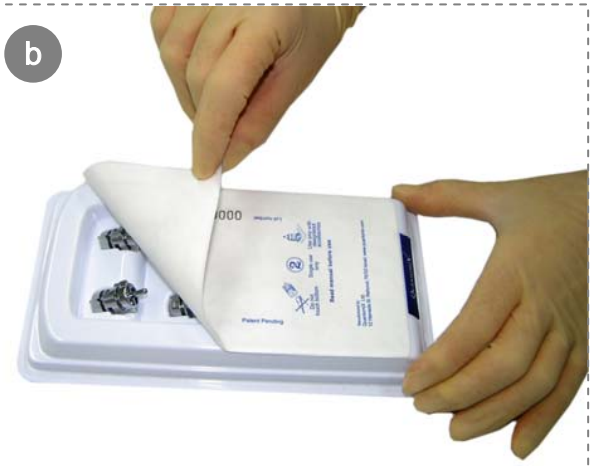
Step 5: Place capsules on plate

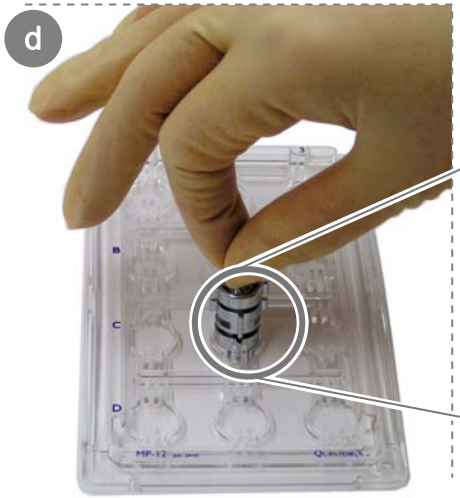
a

b



c

d



Fit capsule wings in slots

e

Turn counter-clockwise to open

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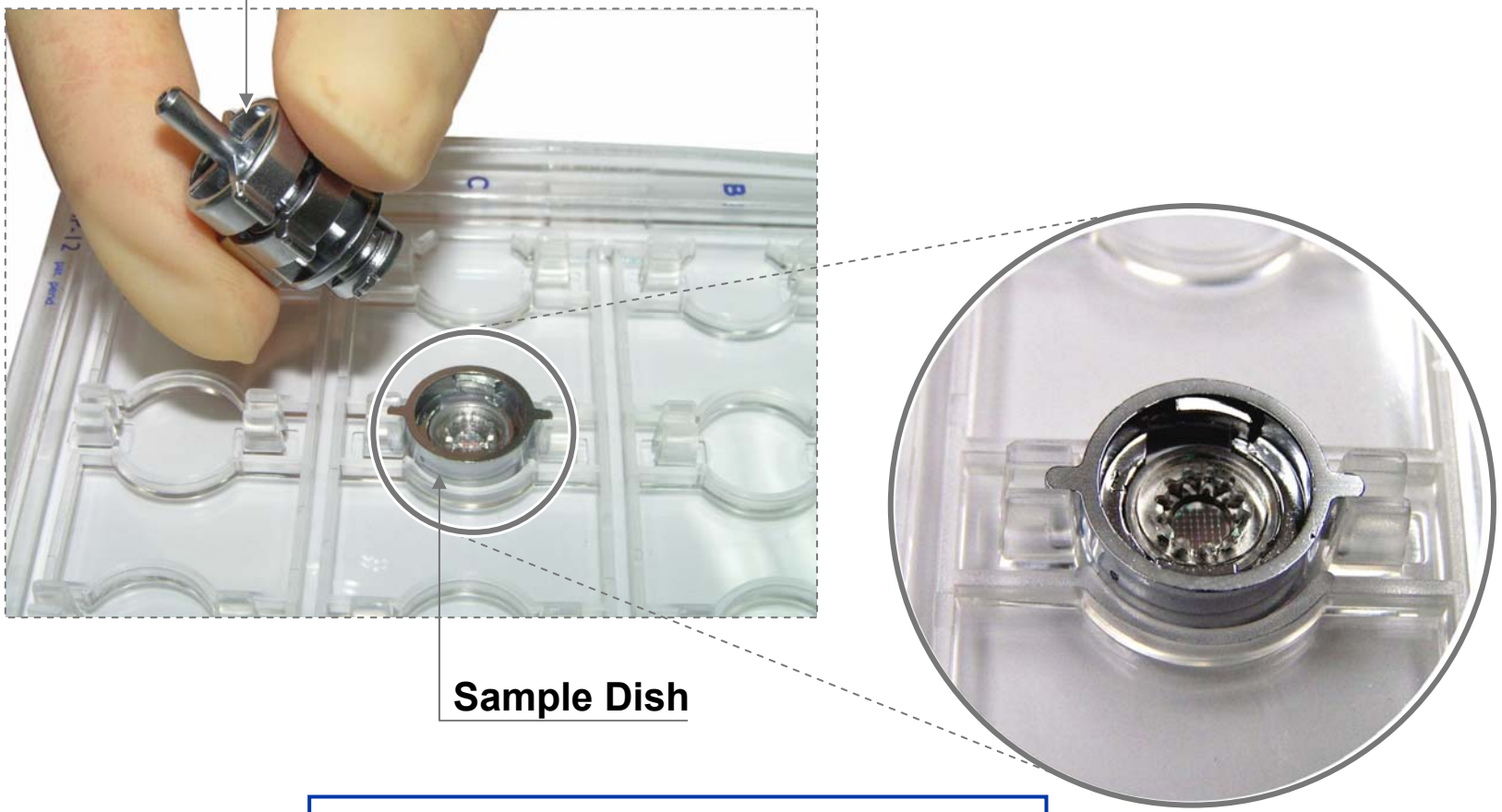
Step 6: Remove the Sealing Stub



Note: Once removed, store the sealing stub in its original package for future use

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Step 7: Open Imaging Buffer and Calibration Capsule box

Use caution when using sharp objects

Note: Read data sheets

RT-56 Calibration Capsule

IB-74 Imaging Buffer

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Step 8: Reconstitute Imaging Buffer

Open metal cap

a

Open rubber seal

b

Add 1ml of double distilled water

c

d

Shake vial to fully dissolve powder

Note: Vial contains paper spacers

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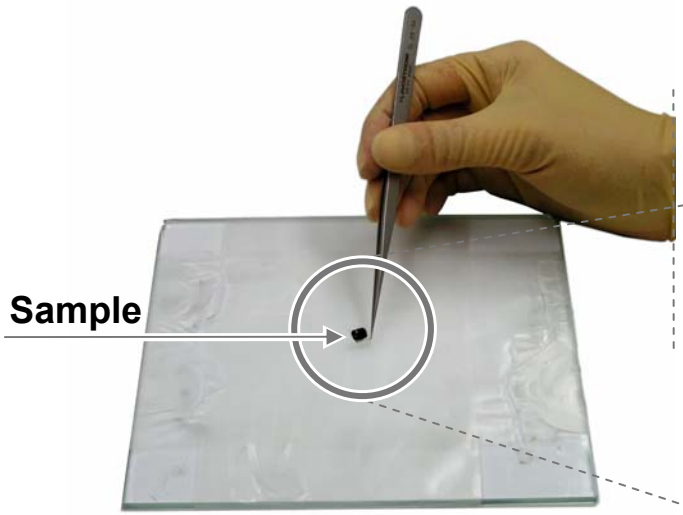
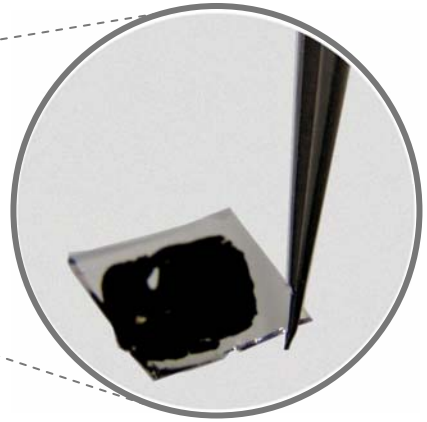
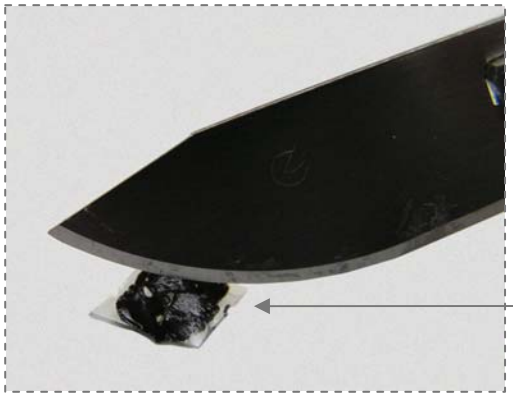
Step 9: Sample preparation





Note: Sample thickness: up to 1000µm

Trim the sample

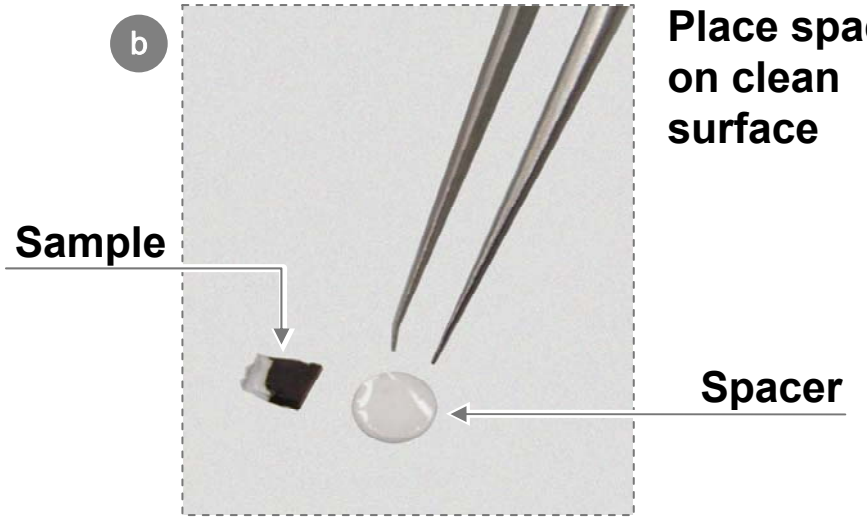


Note: Maximal sample diameter: 3mm

Detailed sample preparation protocols can be found at www.quantomix.com

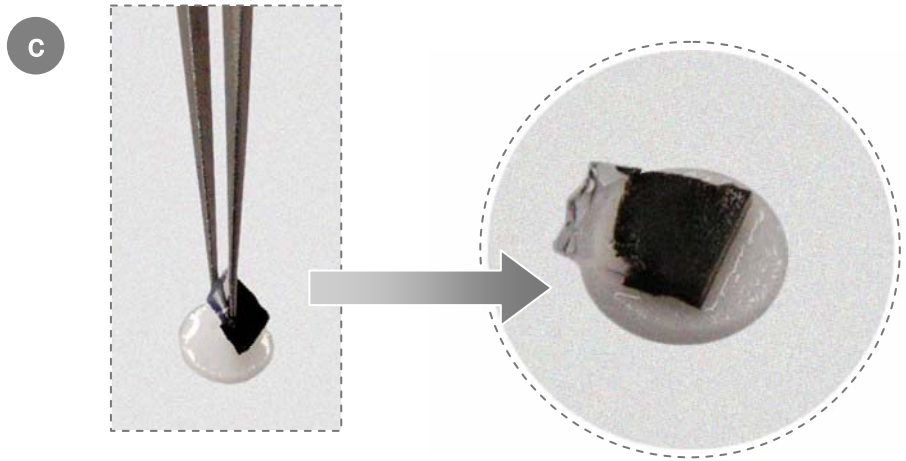
Step 10: Place sample on Spacer

Remove spacer from vial



Place spacer on clean surface

Center sample on spacer



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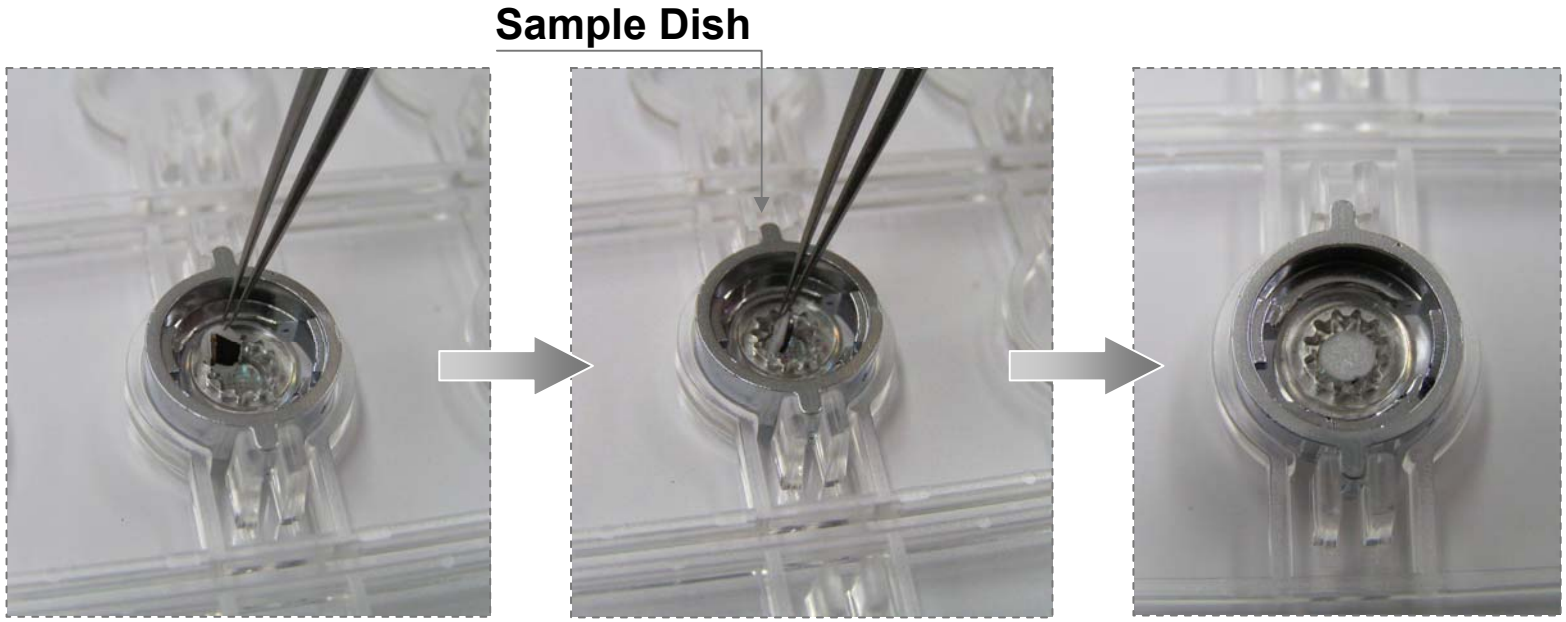
Step 11: Place sample and spacer in the Sample Dish



Locate the sample between the Sample Dish membrane and the spacer. Procedure is best done if only the spacer is held.

CAUTION

Do not touch the capsule membrane with the tweezers

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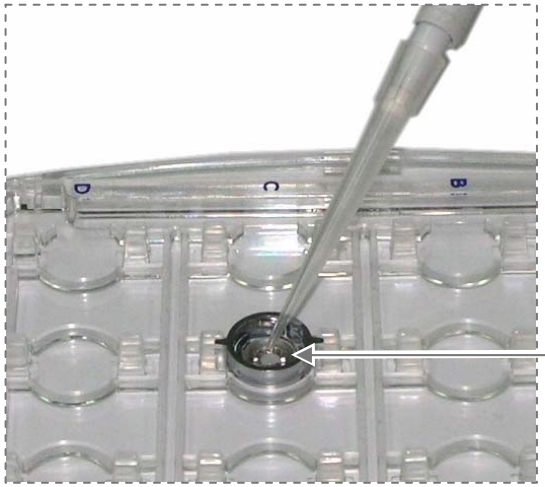
Step 12: Add Imaging Buffer

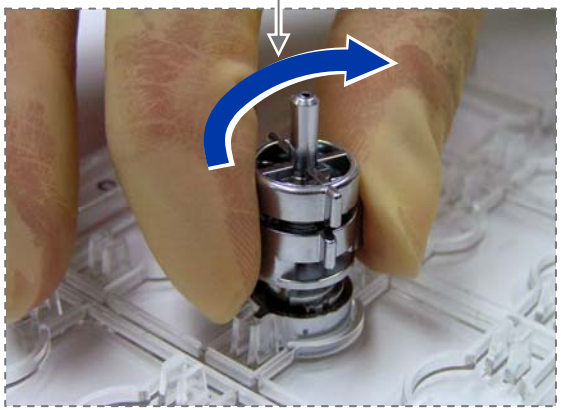


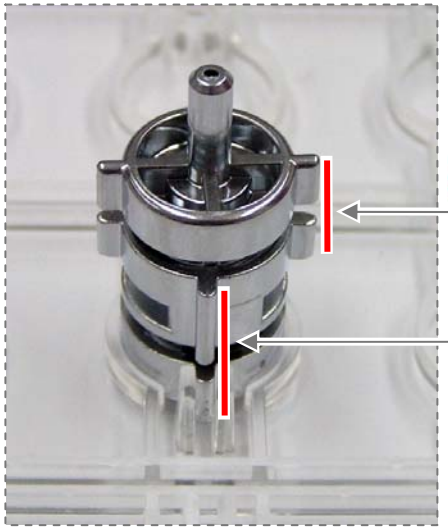
Add 5µl Imaging Buffer

CAUTION

Do not touch the capsule membrane with the pipette

Close capsule – turn stub clockwise





Capsule is properly sealed only when wings are aligned

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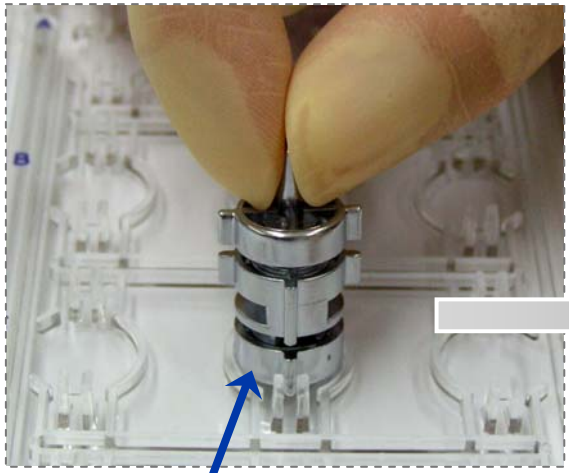
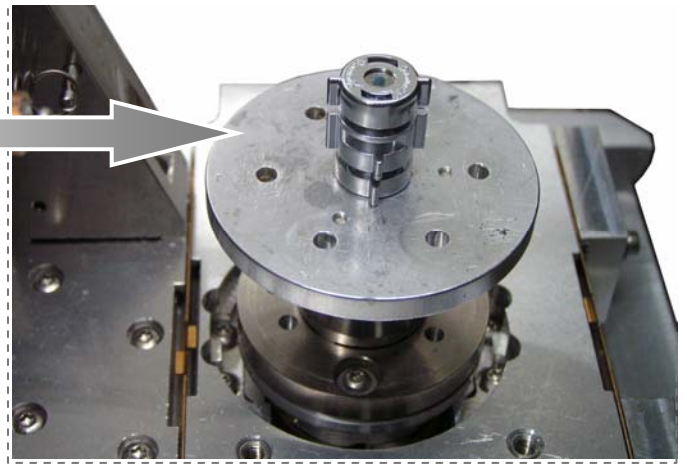
Final step: Place capsule in SEM



Gently tilt and pull to remove



Note: Label here using a felt tip marker for future identification

- *Set stage at minimal height*
- *Capsule membrane should face up*
- *Capsule's height is 28mm (Above stage surface – 20mm)*
- *A stub adaptor may be required*

Sample is now ready for WETSEM imaging

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Recommended SEM parameters

Suitable Parameter Range for WETSEM™ Imaging

Parameter	Recommended Range	Comments
Acceleration Voltage	15 - 30 kV	Not lower than 10 kV
Probe Current (based on source type)		
Tungsten filament	0.4 – 1.0 nA	Not higher than 1.0 nA
FEG	0.1 - 0.5 nA	Not higher than 0.5 nA
Working Distance (based on detector type)		
Semiconductor (BSE)	6 - 10 mm	Acceptable 4 -15 mm
Robinson (BSE)	10 - 20 mm	Better efficiency at high kV
Scintillator (BSE)	6 -10 mm	Acceptable 6 -10 mm
Everhart-Thornley (SE)	8 -12 mm	Acceptable 6 -15 mm
In-lens / Through the lens	2 – 4 mm	Manufacturer dependent

For further assistance and inquiries please contact our support department at tech@quantomix.com

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